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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,400	06/01/2001	Markus Andreasson	65088/NHZ/ RSM	2646
7590	12/09/2003		EXAMINER KIM, AHSHIK	
Cooper & Dunham LLP 1185 Avenue of the Americas New York City, NY 10036			ART UNIT 2876	PAPER NUMBER

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/872,400

Applicant(s)

ANDREASSON ET AL.

Examiner

Ahshik Kim

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09/25/03 (RCE).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13-19 is/are rejected.
- 7) ☐ Claim(s) 9, 11 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in  
5 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is  
eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)  
has been timely paid, the finality of the previous Office action has been withdrawn pursuant to  
37 CFR 1.114. Applicant's submission filed on September 25, 2003 has been entered.

### ***Drawings***

2. The application was filed with some informal drawings. The application having been  
allowed, formal drawings are required in response to this Office Action or when the application  
is allowed.

### ***Amendment***

3. Amendment filed on June 23, 2003 has been entered. Claims 1-19 remain for  
examination.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all  
20 obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in  
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are  
such that the subject matter as a whole would have been obvious at the time the invention was made to a person  
having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the  
25 manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 2, 4, 7-9, 13, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dwinell et al. (US 6,267,293, "Dwinell" hereinafter, previously cited) in view of Robertson et al. (US 6,446,868, "Robertson" hereinafter).

Re claims 1, 4, 7-9, 13, and 16-19, Dwinell teaches a barcode scanning system and method for scanning a barcode which consists of a plurality of parallel lines of varying thickness (see abstract) by the steps of capturing a series of barcode images by means of reading device (col. 3, lines 64+), detecting edges of the barcode captured in each image (col. 2, lines 49+; col. 8, lines 3+); calculating displacement of other bar/edge based on already captured frame (see abstract); determine whether each image subset is within acceptable threshold (col. 2, lines 49-64; col. 3, lines 53-63) and reconstruct the barcode taking into account calculated offset/displacement (see abstract).

Dwinell fails to specifically teach or fairly suggest that the code being scanned and reconstructed is a two-dimensional barcode.

Robertson teaches a scanning system decoding two-dimensional code with one-dimensional scanner (see abstract) wherein the collected one-dimensional codes are reconstructed to be the original two-dimensional code (col. 1, lines 50+; col. 3, lines 22+).

In view of Robertson's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to employ well-known barcode reconstruction method to the teachings of Dwinell in order to predict and successfully decode a two-dimensional barcode. Two-dimensional barcode is gaining rapid acceptance due to increased data-carrying capacity. Accordingly, it is the Examiner's view that an embodiment utilizing one-dimensional code can certainly be implemented with two-dimensional barcode. Such modification would have been contemplated by one ordinary skill in the art to carry additional information within the barcode.

Re claim 2, although Dwinell does not use the term "pixel", in order to detect edge or edge transition, the reader has the capacity to recognize the darkness (or lack thereof) of the bars being scanned.

7. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dwinell et al. (US 6,267,293) as modified by Robertson et al. (US 6,446,868) as applied to claim 1 above, and further in view of Klancnik et al. (US 5,550,365) The teachings of Dwinell as modified by Robertson have been discussed above.

Dwinell/Robertson fail to specifically teach or fairly suggest of utilizing histogram for the captured image.

Klancnik teaches a system for decoding barcode symbol (see abstract) wherein the histogram is used to indicate the intensity (or darkness/lightness) of the captured image (col. 24, lines 24+; col. 24+, lines 42+).

5 In view of Klancnik's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to employ well-known use of histogram to the teachings of Dwinell/Robertson in order to accurately reconstruct collected images. Histogram provides the level of darkness and width for the captured image. If the two dimensional code were treated as collection/layer of one-dimensional code as disclosed in Robertson, matching the collected frame relying on the pixel histogram data would be advantageous. Moreover, using histogram, peaks  
10 and valleys can be identified and located, and the area between the peaks and valleys can also be interpolated, and therefore an obvious expedient.

8. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dwinell et al. (US 6,267,293) as modified by Robertson et al. (US 6,446,868) as applied to claim 13  
15 above, and further in view of Sizer, II et al. (US 6,036,086, "Sizer" hereinafter). The teachings of Dwinell as modified by Robertson have been discussed above.

Dwinell/Robertson fail to specifically teach or fairly suggest that the reading/scanning device is a pen type.

Sizer discloses transaction apparatus 110 in the form of mobile telephone comprising a  
20 scanning 51 and a scanning pen 52 (col. 3, lines 32+; see abstract).

In view of Size's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to incorporate a scanner or scanning pen into a mobile

Art Unit: 2876

telephone so that a user can conveniently uses his/her mobile phone as a scanning unit. Pen type scanners may not need to be physically built into a phone as shown by Sizer. Rather, pen scanner can be an accessory which can connectably used with a mobile phone. By incorporating a scanning unit into a mobile phone, a consumer may not have to carry several devices for  
5 different transactions, and therefore an obvious expedient.

***Allowable Subject Matter***

9. Claim 10 is allowed.

10. Claims 9, 11, 12 is objected to as being dependent upon a rejected base claim, but would  
10 be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:  
Although He et al. discloses error handling in edge transitions or reconstructing the barcode, the cited references fail to specifically teach or suggest of disclosing the error function in terms of  
15 speed of the reading device as set forth in claim 10.

***Response to Remarks***

12. Amended claims and remarks enclosed in the request for continued examination have  
20 been carefully reviewed. In doing so, it is the Examiner's view that reconstructing of the barcode as disclosed in the instant application (at least the way the claims are phrased) appear similar to what's known as "stitching" of the barcode. Stitching is generally known as collecting several partial image of the barcode and combines them to generate the whole code.

Art Unit: 2876

Accordingly, the previously cited reference to Dwinell et al., in the Examiner's opinion meet the claimed invention at least disclosed in independent claims 1, 13, 16, and 17. If the claimed invention is patentably distinct from "stitching", the Examiner respectfully suggests the Applicants to amend the claims disclosing such distinction. Applicant is further requested to review and consider other cited references, particularly to the Pelton and De Renzis patents.

### *Conclusion*

I. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Pelton (US 5,457,309); De Renzis (US 6,394,352); Kannon et al. (US 6,081,627) disclose barcode reading apparatus and the methods for reading barcode.

II. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Ahshik Kim* whose telephone number is (703)305-5203 . The examiner can normally be reached between the hours of 6:00AM to 3:00PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (703) 305-3503. The fax number directly to the Examiner is (703) 746-4782. The fax phone number for this Group is (703)872-9306.


Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [ahshik.kim@uspto.gov].

*All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.*

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Ahshik Kim  
Patent Examiner  
Art Unit 2876

December 1, 2003

  
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